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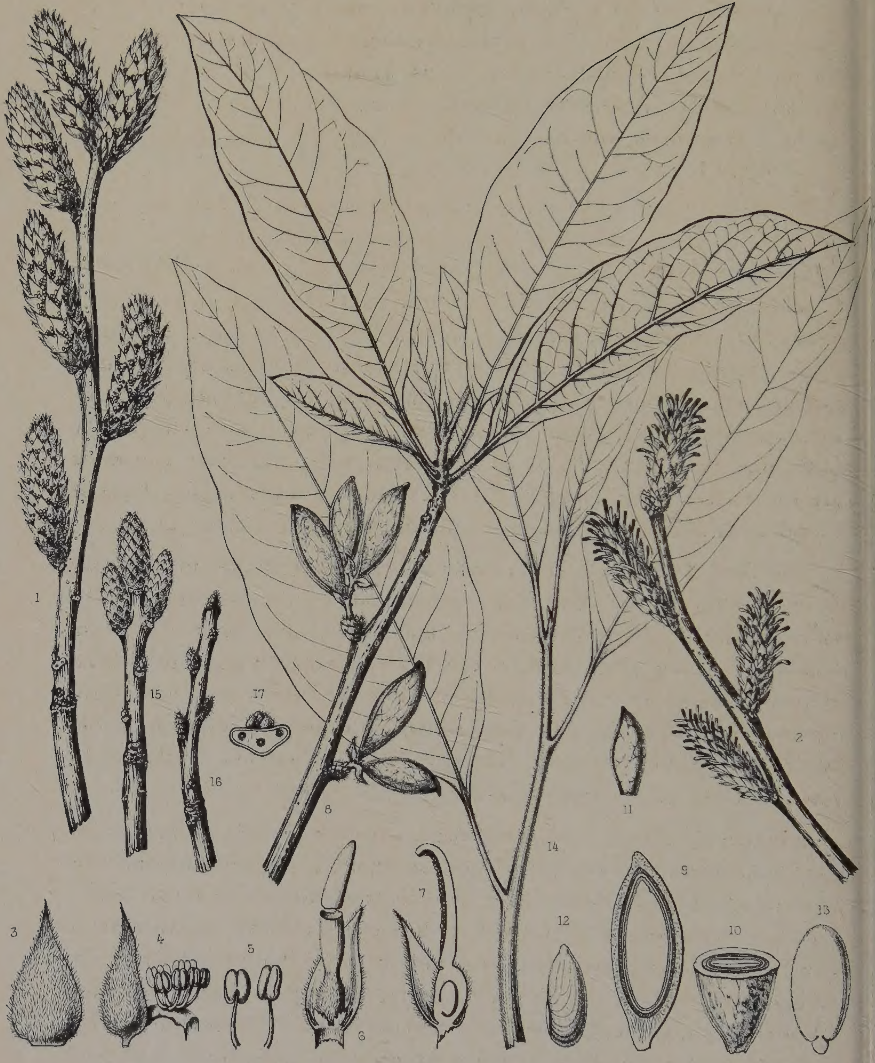
SOME HARDY SOUTHERN TREES AND SHRUBS. ONE of the useful services of the Arnold Arboretum and similar institutions is to test the hardiness, adaptability to cultivation, and general desirability of plants from all parts of the world. This work is carried on continually even with plants for which the chance of success seems slight. Many plants are tried out that do not survive, but amongst those that do thrive are some of considerable interest which find a permanent place in gardens or in landscape planting. The pioneer work of the Arboretum in the discovery and introduction of the trees and shrubs of China and other parts of eastern Asia is well known, and many Oriental plants now frequently found in American or European gardens were first grown here. But perhaps little is known by the general public of the number of trees and shrubs from our own southern states that can be seen growing in the Arboretum. All of these are of interest to the students of American plants, and some of them are desirable for general planting.

In the latitude of Boston, with the severe winter temperatures sometimes experienced, climate is the most important limiting factor in the introduction and growth of southern plants, but other things, such as soils, the length of the growing period and seasonable rainfall have to be taken into consideration. Since many plants prove hardy under cultivation far north of the latitudes in which they grow naturally, their present distribution must be explained on other grounds than that of the climate alone.

It is often impossible to tell whether a plant will prove hardy until it has been tried, and while it is naturally impossible to grow most of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the sub-tropical southern plants out-of-doors in New England, occasionally some rather surprising successes have been scored. These are often, though not always, southern species of trees and shrubs closely related to northern ones, for in general it has been found that southern representatives of the northern groups are much more likely to stand transplanting to colder climates than are those of genera entirely southern in their natural distribution. Thus, almost any of the southern Willows, Maples, Birches and Alders, and many of the Oaks, Hickories, Azaleas, Dogwoods, and most members of the Rose family, are likely to be hardy here.

The Bald Cypress, one of the most picturesque trees of the southern swamps, has been grown in the Arboretum, but this appears to be about its northern climatic limit. As a native tree it ranges only as far north as southern Delaware, and while it grows naturally only in swamps or along the borders of streams and bayous, it thrives in fairly dry situations when transplanted. One of the reasons why it has not travelled farther north without assistance is probably because of the special requirements of its seeds, since these seem to germinate in nature only after long submergence in shallow water or mud. And since the seeds are rather heavy and not easily transported, the Bald Cypress has not found a continuous succession of suitable places farther north.

The Oaks (*Quercus*) have a wide geographical range, most of our species being found in temperate regions, some extending as far north as the limits of the deciduous forests, and others being confined to warm countries. A few of the Oaks of the Rocky Mountain states have been grown in the Arboretum, but none of those from the Pacific coast have proved successful. But the Oak collection contains several from the southern states, including the Overcup Oak, Basket Oak, Willow Oak, Georgia Oak, and Arkansas Oak.

The Sweet Gum (*Liquidambar Styraciflua*) is one of the commonest deciduous trees in many parts of the southern United States, and it is occasionally found wild as far north as southern Connecticut and Pennsylvania. It seems to be quite hardy here, and some thrifty specimens can be seen near the small ponds, not far from the Forest Hills entrance of the Arboretum. It is a handsome shapely tree and is desirable for planting in certain places for shade or ornament. The rather large 5–7-lobed, star-like leaves give it an unusual appearance, and it is particularly attractive in autumn when the leaves take on brilliant tints of yellow and crimson.

Many of the native Azaleas of the southern states have been brought into cultivation here, and some of them are very handsome. *Rhododendron calendulaceum*, with yellow to scarlet flowers, and *Rhododendron speciosum*, in which the flowers are of a somewhat deeper red, are amongst the most striking of these.

One of the most desirable late-blooming shrubs that has deservedly become better known in the last few years, is the white-flowered Buckeye (*Aesculus parviflora*). It is a native of the Piedmont regions from South Carolina to Florida and Alabama, but it stands the winters well in the vicinity of Boston, and a handsome clump of it may be seen in the Arboretum at the foot of the wooded knolls and at the western edge of the Horse-chestnut group. It is a vigorous spreading shrub up to ten or twelve feet in height, and its profusion of white flowers in erect terminal spikes make it a most attractive sight in July and early August when nearly all other trees and shrubs are through blooming.

The red-flowered Buckeye (*Aesculus discolor*) is another shrubby southern species that has much to recommend it. It blooms in the Arboretum early in June, and the flowers borne in a loosely-flowered spike are of mixed yellow and scarlet. It grows naturally from Georgia to eastern Texas.

Amongst the notable small trees from the southern states growing at the Arboretum is *Gordonia alatamaha*, a plant not now known in the wild state, although the seeds are said to have been collected many years ago in Georgia by William Bartram. It blooms here each year, although the plants are barely hardy and are partly winter-killed in severe seasons. The large single white flowers that appear in late summer or autumn, and the large, bright green, obovate or narrowly elliptic leaves that become brightly colored late in the season, make it very attractive.

The Oak-leaved Hydrangea (*Hydrangea quercifolia*), from Georgia, Florida and Mississippi; the Mock-Orange (*Philadelphus pubescens*), from Tennessee and the southern Ozarks; and (*Neviusa alabamensis*), a rare shrub, somewhat related to the Spiraeas, known only from a small area in Alabama, are other distinctly southern shrubs that have been grown in the Arboretum.

The Cork Wood (*Leitneria floridana*) is another rare and interesting shrub or small tree of the southern states which may be seen at the Arboretum. The name Cork Wood is well-deserved, as the wood when dry is extremely light and porous and considerably lighter than common cork, and with the exception of the Balsa Wood of the West Indian and Caribbean regions, it is the lightest known. It is known only from a few widely scattered localities, having first been discovered in western Florida at a station later destroyed by enroachment of the sea. The plant was supposed to have become extinct until it was rediscovered in 1895 in the deep swamps along the Mississippi River, in southeastern Missouri and northeastern Arkansas. It has also been found locally in southern Georgia and near the mouth of the Brazos River in Texas. In its native swamps along the Mississippi it sometimes becomes a small tree twenty feet in height with a trunk diameter of four or five inches, but at the Arboretum it is scarcely more than a shrub in size, the largest specimens being eight or ten feet high. The bark is smooth, of a brownish color and marked with pale dots, and the stout branches have numerous half-moon-shaped scars arranged in about five ranks. The leaves are broadly lanceolate, five to eight inches long and two to three inches wide. They are of a thick leathery texture, dark green and conspicuously net-veined above, and are thickly coated on the under side with pale brown tomentum. The catkins, which appear before the new leaves, are somewhat like those of the Cottonwood, and as in the Cottonwoods and Willows, to which the Cork Wood is somewhat related, the staminate and pistillate flowers are on different plants. Only plants with pistillate flowers are growing in the Arboretum, but since these occasionally produce scattering seeds, it would seem that the sexes are not perfectly distinct.

The Cork Wood is little known in cultivation, and can scarcely be seen outside of a few botanical gardens and parks. It was first grown at the Missouri Botanical Garden after its rediscovery by a collector for that institution. At the Arboretum it is growing in a little boggy depression near the south end of the Horse-chestnut group, and between the native woods and the road. It appears to be perfectly hardy here, and on account of its attractive foliage and remarkably light wood, it might be an interesting novelty for planting about the marshy borders of ponds and streams.

Ernest J. Palmer

A SIMPLE DEVICE FOR EXHIBITING FLOWERING SHRUBS. THE Arnold Arboretum has recently developed a new type of flower holder for exhibiting flowering shrubs. While in several respects it is still capable of improvement, so many inquiries have been made about its construction that the following account has been prepared.

Only those who have tried to exhibit lilacs and other flowering shrubs can appreciate the difficulties of arranging woody material for exhibition. To show to the best advantage they need to retain in the vase the approximate position they held on the tree. In any ordinary container the heavy branches develop a mind of their own and it is difficult to make them stay where they are put. One must either crowd the vase full of branches so that they support each other, or use a flower holder which is attached to the vase or which is so heavy that it will not tip over. The perfect exhibition vase for woody material should therefore, in addition to being cheap and inconspicuous, be capable of holding branches in any desired position and should be so low and heavy that it is not easily upset.

A container which meets these requirements has been achieved by pouring plaster of paris into flat pottery dishes and providing the plaster with guy wires before it hardened. Any cheap pottery dish with a broad flat base can be used as the foundation. The original vases were made from regulation "puppy dishes" sold by a local firm as they were readily available in any quantity at a reasonable price. The dishes were prepared by mixing plaster of paris to the consistency of a thick cream and pouring it in to the height of about one inch. While the plaster was still liquid, three to five pill bottles, coated with vaseline, were inserted in the mixture to provide holes for the branches. One or two short lengths of wire were anchored in the plaster, their lower ends, bent into a double loop to make them hold more firmly. As soon as the plaster began to set, the bottles were carefully removed. When the plaster dried, the finished utensil was something like a shallow pottery dish with a built-in flower holder. Additional support for heavy branches is given by the wires.

In setting up an exhibit the branches are held in the desired position, the wires are wrapped around their bases until the branches are held firmly in place, and a handful of pebbles is used to conceal the wire and plaster and to lend additional support. Very much the same effect could be obtained by anchoring a glass or metal flower holder in the bottom of a vase with plaster of paris, providing it with small guy wires, or thin strips of metal. If a large quantity were desired they could probably be made in one piece by the pottery manufacturers.

EDGAR ANDERSON

PLANTS OF CURRENT INTEREST. THE Mountain Laurel (*Kalmia latifolia*) has burst quickly into flower during the last few days and is now a glorius sight. Unless the weather is unseasonably hot it should remain in fine condition until at least the end of June. Though no other single display can match it in interest, there is much to see in all parts of the Arboretum. Many Hawthorns are in flower on the north slope of Peters Hill. On the Lilac Path the Tree Lilacs are showing their great plumes of creamy flowers and the hybrid French Mock-Oranges are in full bloom. Along the Meadow Road the wild roses are bright pink every morning and several species of Dogwood are in blossom. In the Shrub Collection most of the rose species are in bloom. On the fence of the Bussey Institution along South Street may be seen a fine collection of Hybrid Climbing Roses.

The alternate-leaved Buddleia, *B. alternifolia* Maxim., is now in full flower on the Overlook and along the Centre Street Path. Earliest to flower of those species which are hardy here, it has a long season of bloom, covering the whole month of June and sometimes running well into July. Though it is often referred to as the hardiest of the Buddleias, it is a little too tender to do its best in New England gardens. Even in New York and Philadelphia it needs a dry slope, and careful attention to reach perfection. When well grown it is one of the loveliest of flowering shrubs; with us the bush is somewhat unsightly when not in flower and the flower buds are partly killed during cold winters.

Though discovered by a Russian expedition to China as early as 1875, it was not introduced into western gardens until much later. Farrer sent home seeds in 1914 and by 1922 these had produced fruiting bushes from which the Arboretum plants were raised. Farrer who saw the species in full flower in its native home, wrote of it as follows; "It prefers steep, dry banks and open warm places, where it grows like a fine-leaved and very graceful weeping willow, either as a bush or a small-trunked tree, until its pendulous sprays erupt all along into tight bunches of purple blossom at the end of May, so generous that the whole shrub turns into a soft and weeping cascade of colour''. He tells how it persists in cultivated areas where it may be found ``in cascades of purple along the hedgerows''.

Edgar Anderson

EXPLANATION OF THE PLATE

Leaves, flowers, and fruit of the Corkwood, **Leitneria floridana** Chapm.

(From drawings by C. E. Faxon for Sargent's ''Silva of North America''.)